SEQUENCE LISTING

<110> University of Kansas Center for Research

Walter Reed Army Institute for Research

<120> METHODSFOR THE PRODUCTION OF PURIFIED INVASIN PROTEIN AND USE THEREOF

<130> UOK 5320.1

<140> US 09/830,036

<141> 2001-04-20

<150> PCT/US99/24931

<151> 1999-10-21

<160> 17

<170> PatentIn version 3.0

<210> 1

<211> 409

<212> PRT

Ins Bull

<213> Salmonella typhimurium <400> 1 Met Leu Ile Ser Asn Vall Gly Ile Asn Pro Ala Ala Tyr Leu Asn Asn His Ser Val Glu Asn Ser \$er Gln Thr Ala Ser Gln Ser Val Ser Ala Lys Asp Ile Leu Asn Ser Ile Gly Ile Ser Ser Ser Lys Val Ser Asp Leu Gly Leu Ser Pro Thr Leu\Ser Ala Pro Ala Pro Gly Val Leu Thr Gln Thr Pro Gly Thr Ile Thr Set Ser Leu Lys Ala Ser Ile Gln Asn Thr Asp Met Asn Gln Asp Leu Asn Ala Leu Ala Asn Asn Val Thr Thr Lys Ala Asn Glu Val Val Gln Thr Gln Leu Arg Glu Gln Gln Ala Glu Val Gly Lys Phe Phe Asp Ile Ser Gly Met Ser Ser Ser Ala Val Ala Leu Leu Ala Ala Ala Asn Thr Leu Met Leu Thr Leu Asn Gln Ala Asp Ser Lys Leu Ser Gly Lys Leu Ser Leu Val Ser Phe Asp Ala Ala Lys Thr Thr Ala Ser Ser Met Met Arg Glu Gly Met Asn Ala Leu Ser Gly Ser Ile Ser Gln Ser Ala Leu Gln Leu Gly Ile Thr Gly Val Gly Ala Lys Leu Glu Tyr Lys Gly Leu Gln Asn Glu Ard Gly Ala Leu Lys His

Asn Ala\Ala Lys Ile Asp Lys Leu Thr Thr Glu Ser His Ser Ile Lys Asn Val Leu Asn Gly Gln Asn Ser Val Lys Leu Gly Ala Glu Gly Val Asp Ser Led Lys Ser Leu Asn Ile Arg Lys Pro Val Pro Met Arg Arg Lys Ile Leu Met Met Arg Arg Leu Asn Leu Met Pro Glu Pro Ala Pro Arg Lys Val Tro Val Leu Lys Thr Val Ile Asn Lys Val Ser Leu Asn Ile Tyr Ile Leu Ser Lys Arg Leu Glu Ser Val Glu Ser Asp Ile Arg Leu Glu Gln Asn Tyr Met Asp Ile Thr Arg Ile Asp Ser Ala Gln Asp Ala Asp Asp Gly Arg Ser Asp Tyr Glu Glu Leu Gly His Gly Arg Trp Tyr Cys Arg Gly Val Arg Ala Val Arg Arg Tyr Ser Gly Asn Val Ser Glu Gln Gln Ile Ser Gln Val Asn Asn Arg Val Ala Ser Thr Ala Ser Asp Glu Ala Arg Glu Ser Ser Arg Lys Ser Thr Ser Leu Ile Gln Glu Met Leu Lys Thr Met Glu Ser Ile Asn Gln Ser Lys Ala Ser Ala Leu Ala Ala Ile Ala Gly Asn Ile Arg Ala <210> 2 <211> 382 <212> PRT

<213> Shigella flexneri <400> 2 Met Leu Gln Lys Gln Phe Cys Asn Lys Leu Leu Leu Asp Thr Asn Lys Glu Asn Val Met\Glu Ile Gln Asn Thr Lys Pro Thr Gln Thr Leu Tyr Thr Asp Ile Ser The Lys Gln Thr Gln Ser Ser Ser Glu Thr Gln Lys Ser Gln Asn Tyr Gln Gln Ile Ala Ala His Ile Pro Leu Asn Val Gly Lys Asn Pro Val Leu Thr Thr Leu Asn Asp Asp Gln Leu Leu Lys Leu Ser Glu Gln Val Glh His Asp Ser Glu Ile Ile Ala Arg Leu Thr Asp Lys Lys Met Lys Asp Leu Ser Glu Met Ser His Thr Leu Thr Pro Glu Asn Thr Leu Asp Ile Ser Ser Leu Ser Ser Asn Ala Val Ser Leu Ile Ile Ser Val Ala Val Leu Leu Ser Ala Leu Arg Thr Ala Glu Thr Lys Leu Gly Ser Gln Leu Ser Leu Ile Ala Phe Asp Ala Thr Lys Ser Ala Ala Glu Asn Ile Val Arg Glh Gly Leu Ala Ala Leu Ser Ser Ile Thr Gly Ala Val Thr Gln Val Gly Ile Thr Gly Ile Gly Ala Lys Lys Thr His Ser Gly Ile Ser Asp Glh Lys Gly Ala Leu Arg Lys Asn

IS / DOBACTORS - LONGO

Leu Ala Thr Ala Gln Ser Leu Glu Lys Glu Leu Ala Gly Ser Lys Leu Gly Leu Asn Lys Gln Ile Asp Thr Asn Ile Thr Ser Pro Gln Thr Asn Ser Ser Thr Lys Phe Leu Gly Lys Asn Lys Leu Ala Pro Asp Asn Ile Ser Leu Ser Thr Glu His Lys Thr Ser Leu Ser Ser Pro Asp Ile Ser Leu Gln Asp Lys Ile Asp Thr Gln Arg Arg Thr Tyr Glu Leu Asn Thr Leu Ser Ala Gln Gln Lys Gln Asn Ile Gly Arg Ala Thr Met Glu Thr Ser Ala Val Ala Gly Asn Ile Ser Thr Ser Gly Gly Arg Tyr Ala Ser Ala Leu Glu Glu Glu Glu Leu Ile Ser Gln Ala Ser Ser Lys Gln Ala Glu Glu Ala Ser Gln Val Ser Lys Glu Ala Ser Gln Ala Thr Asn Gln Leu Ile Gln Lys Leu Leu Asn Ile Ile Asp Ser Ile Asn Gln Ser Lys Asn Ser Ala Ala Ser Gln Ile Ala Gly Asn Ile Arg Ala <210> 3 <211> 4 <212> DNA <213> Artificial Sequence <220>

<221>\misc_feature <222> (1)..(4) <223> NdeI restriction site <400> 3 gaga <210> 4 COCHOCH TOHOUT <211> 29 <212> DNA <213> Artific al Sequence <220> <221> misc_feature <222> (1)..(29) <223> PCR Primer <400> 4 gagacatatg ttatcagage aggttcage <210> 5 <211> 30

<212> DNA

<220>
<221> misc_feature
<222> (1)..(30)
<223> PCR Primer
<400> 5
gagaggatcc traagctcga atgttaccag
<210> 6

30

<211> 27
<212> DNA
<213> Artificial Sequence
<220>

<221> misc_feature <222> (1)..(27)

GRIODER IDPOCI

<223> PCR Primer

<400> 6 gagacatatg ttgcaaaagc aatttgc

<210> 7 <211\(\frac{1}{2}\) 32 <212>\ DNA <213> Artificial Sequence <220> <221> misc_feature <222> (1) (32) <223> PCR Primer <400> 7 gagaggatcc ttaggtgtca attttatcct gc <210> 8 <211> 29 <212> DNA <213> Artificial \$equence <220> <221> misc_feature <222> (1)..(29)

<223> PCR Primer

29

<400> 10

gagacatatg ttgcaaaagc aa

22

<210> 11

<211> 29

<212> DNA

<213> Artificial Sequence

<220>

POUCLUS LOVEOL

<221> misc_feature

<222> (1)..(29)

<223> PCR Primer

<400> 11

gagactcgag atgcgtttt ttggcaccg

29

<210> 12

<211> 29

<212> DNA

<213> Artificial Sequence

<22 > misc_feature

<222 (1)..(29)

<223 PCR Primer

<400> 12

gagactegag acceagagaa gaacttacg

29

<213> Artificial Sequence

<220>

<221> misc_feature

<222> (1)..(30)

<223> PCR Primer

<400> 13

gagaggatcc ttaagctcga atgttaccag

30

<210> 14

<212 DNA

<213 | Artificial Sequence

<220>

<221> misc_feature

<222> (1)..(27)

<223> PCR Primer

<400> 14

gagacatatg ttgcaaaagc aatttgc

<210> 15

MARINE LOBOL

<211> 31

<212> DNA

<213> Artificial Sequence

<220>

<221> misc_feature

<222> (1)..(31)

<223> PCR Primer



31

> <220>

Pogagors lorogi

<400> 16

gagactegag chtgecaetg eteaatet

<210> 17

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<221> misc_feature

<222> (1)..(30)

TOOSINGE LOCUER

<223> PCR Primer

The

<400> 17

gagaggatcc ttaagctcga atgttaccag

30

~~"